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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,720	11/12/2003	Steve Montellese		7238

7590 05/04/2006

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EXAMINER

HOLTON, STEVEN E

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/706,720

Applicant(s)

MONTELLESE, STEVE

Examiner

Steven E. Holton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

A listing of registered patent attorneys and agents is available on the USPTO Internet web site <http://www.uspto.gov> in the Site Index under "Attorney and Agent Roster." Applicants may also obtain a list of registered patent attorneys and agents located in their area by writing to the Mail Stop OED, Director of the U. S. Patent and Trademark Office, PO Box 1450, Alexandria, VA 22313-1450

### ***Specification***

2. The disclosure is objected to because of the following informalities: the section labeled "Brief Description of Drawings" should include a listing of Fig. 4; which is discussed later in the specification, but omitted from the brief listing of figures.

Appropriate correction is required.

### ***Claim Objections***

3. The claim text is objected to because of the following informalities: following claims 11 and 12 there is extraneous text. The text has some form similar to claim language, but is not presented in a manner indicating a formal claim. This extraneous text should either be deleted from the application or edited into a proper form and necessary fees paid if the text was intended to be presented as claims. Appropriate correction is required.

Claim 5 is objected to due to a minor informality: the term "sensing device" needs the term 'a' in front of it because the term is not previously introduced in the claim language.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 10, 11, and 12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 10 recites that the claimed invention could be a "software program". A software program is currently considered non-statutory material under current guidelines and cannot be patented. Circuits and computer memory devices with complied computer programs to be run by a computer program are considered statutory under the current guidelines. Also, the invention

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described in claim 10 represents an abstract concept. That is, the claim (as a software program) defines calculating a position of an object based on reference points and processing movement and position. This result is not applied nor utilized by anything but merely calculated. This draws the claim as a patent for a formula or calculation, which is not considered patentable under the current guidelines.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 5 recites the limitation "the waves" in line 7 and "the field" in line 10. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the action" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the projected area" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims 8 and 9 recite the limitation "the control characteristic" in line 1 of each claim. There is insufficient antecedent basis for this limitation in the claims.

Claim 10 recites the limitation "said processing of movement and position" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claims. The claim only discloses calculation based on relative position with respect to reference points.

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6. Claims 5-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 5, the claim is unclear in the language of the final portion of the claim dealing with "matching the interference pattern imaged on the sensor with the original pattern subtracted from the current image pattern". It is unclear if the interference pattern is to be matched with the result of subtracting the current image pattern from the original pattern, or if the interference pattern is the original pattern subtracted from the current image pattern (which appears to be what is described in Fig. 3). Also, the claim does not describe what a field would be and how the object dwells or moves in the field. The object is described as moving into the predetermined area but no mention of a field is provided in the claim language.

Regarding claims 6-9, claim 6 recites the limitation "regenerating the image of the template to accommodate the functionality;". There is no previous mention within the claim language what "the functionality" and how that is associated with the method. Further, there appears to be no definition of "the control characteristic" within the claim language of claims 6-9. Also, it is unclear what 'regenerating the image of the template' means as there is no language in the claims to indicate the template being generated a first time. Also, no information is provided in the claim to indicate what generates or regenerates the template.

Claim 6 also uses the phrase, "represent in some manner". This phrase is unclear what manners would be acceptable or not acceptable. Step (b) of claim 6

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contains the text “[what action]” at the end of the line. It is unclear what the use of this text is and is assumed to be extraneous to the claim language. Step (d) recites “repeating steps a-c”, it is unclear how long the repeating will take place or if there are any ways of ending the method.

### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 6-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Arnon (USPN: 6650318).

Regarding claim 6, Arnon discloses presenting a user interface from a template (Fig. 6, element 80 is a user interface from a standard template), detecting the movement and location of a user interaction, determining an appropriate response to the action, and regenerating the image of the template to accommodate the function. Fig. 7 shows a different template of keys and Arnon discusses changing between first and second sets of keys by typed commands in col. 8, lines 17-26.

Regarding claims 7, 8, and 9, the Examiner is unclear as to the meaning of certain terms, this is discussed above in the rejections under 35 USC 112, so the rejection of these claims is as best understood by the Examiner.

Regarding claim 7, Arnon discloses using his input system to provide a mouse functionality (Fig. 3b, col. 6, lines 21-28).

Regarding claim 8, Arnon discloses using a users hand to interact with the interface (Figs. 13 and 14, col. 10, lines 7-19).

Regarding claim 9, the limitations of this claim include using a finger such as in claim 8 and redrawing the image to provide feedback regarding success. The changing of the keyboard from one template to another as in claim 6 provides feedback if the user successfully typed in the correct sequence to change to a new layout or not.

Regarding claim 10, Arnon discloses using reference points to determine the location of an input object (Fig. 11, col. 9, lines 30-40).

Regarding claim 11, Arnon discloses using a processor to calculate the location of the object (Fig. 11, element 50; col. 9, lines 46-48).

Regarding claim 12, Arnon discloses connecting the input device to a computer (Fig. 1, the connection from the sensors to the processor). Such a connection would have an interface to connect the input device and the computer and to transmit data about the location and movement of the object to the computer system.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



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8. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnon (USPN: 6650318) in view of Tomasi et al. (USPN: 6710770), hereinafter Tomasi.

Regarding claims 1, Arnon discloses an input detection system comprising a system for projecting a holographic image onto an area (Fig. 2, element 65), a reception device that registers the imaged area and responds to the wavelength of light of the projected interface (Fig. 1, element 40; col. 6, lines 45-46).

However, Arnon does not discuss the method of using a camera (CCD) to determine the location of an input from the user. The use of a CCD as a sensor is all that is provided by Arnon.

Tomasi discloses an optical input system for a virtual keyboard. Tomasi describes using a camera to measure the background of the system and then subtract the background from the real input image to determine the input image for finding the location (col. 9, lines 31 - 50). That is the computer is configured to measure the image generation pattern and background information (Tomasi, col. 9, lines 35-37) and then calculate the difference with the received image (col. 9, lines 46-50) so that corrected received image is then used to determine the location of the object in the sensing area.

At the time of invention it would have been obvious to one skilled in the art to combine the teachings of Tomasi and Arnon. Using a holographic keyboard as described by Arnon with a subtraction method as described to Tomasi. The motivation for doing so would have been "to improve the signal/noise ratio (Tomasi, col. 9, line 32)" for easier detection of the indicated location.

Regarding claim 2, the Examiner takes Official Notice that it is well-known in the art that reflective or transmissive imaging devices can be used to produce a holographic image. Such devices could include reflective and transmissive Liquid Crystal Displays or other optical arrangements to alter the light projection of the display device.

Regarding claim 3, Tomasi describes using a digital camera (abstract), which is a solid state sensing device. Also, Arnon mentions using a CCD which is a type of solid state sensing device (col. 3, lines 5-7).

Regarding claim 4, Arnon discloses the image representing a keyboard (Fig. 6) and also as a game (Fig. 17).

Regarding claim 5, the Examiner notes that this method is closely related to the device described in claim 1. Therefore the arguments made regarding claim 1 can be used where applicable to claim 5. Arnon further describes triggering a function based on the position of the object within the input area (abstract, lines 7-8). Wherein, depending on the location of the object in the sensing area a different operation or function is performed. That allows the hologram-based keyboard to function as a keyboard device.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven E. Holton whose telephone number is (571) 272-7903. The examiner can normally be reached on M-F 8:30-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven E. Holton  
April 30, 2006  
Division 2629

AMR A. AWAD  
PRIMARY EXAMINER  
